

$\rho(1700)$ $I^G(J^{PC}) = 1^+(1^{--})$

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 $\rho(1700)$ MASS **$\eta\rho^0$ AND $\pi^+\pi^-$ MODES**

VALUE (MeV)

 1720 ± 20 OUR ESTIMATE

DOCUMENT ID

 $\eta\rho^0$ MODE

VALUE (MeV)

DOCUMENT ID

TECN

COMMENT

The data in this block is included in the average printed for a previous datablock.

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | |
|---------------|-----------------------|------|--|
| 1740 ± 20 | ANTONELLI 88 | DM2 | $e^+e^- \rightarrow \eta\pi^+\pi^-$ |
| 1701 ± 15 | ¹ FUKUI 88 | SPEC | $8.95\pi^-p \rightarrow \eta\pi^+\pi^-n$ |

¹ Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi^-$ background. From a two Breit-Wigner fit. **$\pi\pi$ MODE**

VALUE (MeV)

EVTS

DOCUMENT ID

TECN

COMMENT

The data in this block is included in the average printed for a previous datablock.

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|------------------------------|-------|---------------------------|------|--|
| 1780 ± 20 $^{+15}_{-20}$ | 63.5k | ² ABRAMOWICZ12 | ZEUS | $e p \rightarrow e\pi^+\pi^-p$ |
| 1861 ± 17 | | ³ LEES | 12G | BABR $e^+e^- \rightarrow \pi^+\pi^-\gamma$ |
| 1728 ± 17 ± 89 | 5.4M | ^{4,5} FUJIKAWA | 08 | BELL $\tau^- \rightarrow \pi^-\pi^0\nu_\tau$ |
| 1780 ± 37 | | ⁶ ABELE | 97 | CBAR $\bar{p}n \rightarrow \pi^-\pi^0\pi^0$ |
| 1719 ± 15 | | ⁶ BERTIN | 97C | OBLX $0.0\bar{p}p \rightarrow \pi^+\pi^-\pi^0$ |
| 1730 ± 30 | | CLEGG | 94 | RVUE $e^+e^- \rightarrow \pi^+\pi^-$ |
| 1768 ± 21 | | BISELLO | 89 | DM2 $e^+e^- \rightarrow \pi^+\pi^-$ |
| 1745.7 ± 91.9 | | DUBNICKA | 89 | RVUE $e^+e^- \rightarrow \pi^+\pi^-$ |
| 1546 ± 26 | | GESHKEN... | 89 | RVUE |
| 1650 | | ⁷ ERKAL | 85 | RVUE 20–70 $\gamma p \rightarrow \gamma\pi$ |
| 1550 ± 70 | | ABE | 84B | HYBR 20 $\gamma p \rightarrow \pi^+\pi^-p$ |
| 1590 ± 20 | | ⁸ ASTON | 80 | OMEG 20–70 $\gamma p \rightarrow p2\pi$ |
| 1600 ± 10 | | ⁹ ATIYA | 79B | SPEC 50 $\gamma C \rightarrow C2\pi$ |
| 1598 ± 24 | | BECKER | 79 | ASPK 17 π^-p polarized |
| 1659 ± 25 | | ⁷ LANG | 79 | RVUE |
| 1575 | | ⁷ MARTIN | 78C | RVUE 17 $\pi^-p \rightarrow \pi^+\pi^-n$ |
| 1610 ± 30 | | ⁷ FROGGATT | 77 | RVUE 17 $\pi^-p \rightarrow \pi^+\pi^-n$ |
| 1590 ± 20 | | ¹⁰ HYAMS | 73 | ASPK 17 $\pi^-p \rightarrow \pi^+\pi^-n$ |

² Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho-\omega$ interference.³ Using the GOUNARIS 68 parametrization of the pion form factor leaving the masses and widths of the $\rho(1450)$, $\rho(1700)$, and $\rho(2150)$ resonances as free parameters of the fit.⁴ $|F_\pi(0)|^2$ fixed to 1.⁵ From the GOUNARIS 68 parametrization of the pion form factor.⁶ T-matrix pole.⁷ From phase shift analysis of HYAMS 73 data.⁸ Simple relativistic Breit-Wigner fit with constant width.⁹ An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.¹⁰ Included in BECKER 79 analysis. **$\pi\omega$ MODE**

VALUE (MeV)

DOCUMENT ID

TECN

COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | |
|---------------|---------------------------|------|---------------------------------------|
| 1550 to 1620 | ¹¹ ACHASOV 00I | SND | $e^+e^- \rightarrow \pi^0\pi^0\gamma$ |
| 1580 to 1710 | ¹² ACHASOV 00I | SND | $e^+e^- \rightarrow \pi^0\pi^0\gamma$ |
| 1710 ± 90 | ACHASOV 97 | RVUE | $e^+e^- \rightarrow \omega\pi^0$ |

¹¹ Taking into account both $\rho(1450)$ and $\rho(1700)$ contributions. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$. $\rho(1450)$ mass and width fixed at 1400 MeV and 500 MeV respectively.¹² Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$.

NODE=M065

NODE=M065

NODE=M065205

NODE=M065M0

NODE=M065M0

→ UNCHECKED ←

NODE=M065M6

NODE=M065M6

NODE=M065M;LINKAGE=B

NODE=M065M1

NODE=M065M1

NODE=M065M1;LINKAGE=AB

NODE=M065M1;LINKAGE=LE

NODE=M065M1;LINKAGE=FU

NODE=M065M1;LINKAGE=GO

NODE=M065M;LINKAGE=QQ

NODE=M065M;LINKAGE=P

NODE=M065M;LINKAGE=M

NODE=M065M;LINKAGE=R

NODE=M065M;LINKAGE=H

NODE=M065M8

NODE=M065M8

OCCUR=2

NODE=M065M;LINKAGE=I1

NODE=M065M;LINKAGE=I2

$K\bar{K}$ MODE

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | CHG | COMMENT |
|--|------|-------------|----------|-----|--|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| 1740.8 ± 22.2 | 27k | 13 ABELE | 99D CBAR | ± | 0.0 $\bar{p}p \rightarrow K^+ K^- \pi^0$ |
| 1582 ± 36 | 1600 | CLELAND | 82B SPEC | ± | 50 $\pi p \rightarrow K_S^0 K^\pm p$ |

13 K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$.

NODE=M065M2

NODE=M065M2

2 ($\pi^+ \pi^-$) MODE

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|--|------|---------------------|--|---------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 1851 + 27 - 24 | | ACHASOV 97 RVUE | e ⁺ e ⁻ → 2($\pi^+ \pi^-$) | |
| 1570 ± 20 | | 14 CORDIER 82 DM1 | e ⁺ e ⁻ → 2($\pi^+ \pi^-$) | |
| 1520 ± 30 | | 15 ASTON 81E OMEG | 20–70 $\gamma p \rightarrow p4\pi$ | |
| 1654 ± 25 | | 16 DIBIANCA 81 DBC | $\pi^+ d \rightarrow pp2(\pi^+ \pi^-)$ | |
| 1666 ± 39 | | 14 BACCI 80 FRAG | e ⁺ e ⁻ → 2($\pi^+ \pi^-$) | |
| 1780 | 34 | KILLIAN 80 SPEC | 11 e ⁻ p → 2($\pi^+ \pi^-$) | |
| 1500 | | 17 ATIYA 79B SPEC | 50 $\gamma C \rightarrow C4\pi^\pm$ | |
| 1570 ± 60 | 65 | 18 ALEXANDER 75 HBC | 7.5 $\gamma p \rightarrow p4\pi$ | |
| 1550 ± 60 | | 15 CONVERSI 74 OSPK | e ⁺ e ⁻ → 2($\pi^+ \pi^-$) | |
| 1550 ± 50 | 160 | SCHACHT 74 STRC | 5.5–9 $\gamma p \rightarrow p4\pi$ | |
| 1450 ± 100 | 340 | SCHACHT 74 STRC | 9–18 $\gamma p \rightarrow p4\pi$ | |
| 1430 ± 50 | 400 | BINGHAM 72B HBC | 9.3 $\gamma p \rightarrow p4\pi$ | |

14 Simple relativistic Breit-Wigner fit with model dependent width.

15 Simple relativistic Breit-Wigner fit with constant width.

16 One peak fit result.

17 Parameters roughly estimated, not from a fit.

18 Skew mass distribution compensated by Ross-Stodolsky factor.

NODE=M065M2;LINKAGE=AN

NODE=M065M4

NODE=M065M4

 $\pi^+ \pi^- \pi^0 \pi^0$ MODE

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|--|-------------------|------------------|---------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 1660 ± 30 | ATKINSON 85B OMEG | 20–70 γp | |

NODE=M065M;LINKAGE=A

NODE=M065M4;LINKAGE=M

NODE=M065M;LINKAGE=O

NODE=M065M;LINKAGE=C

NODE=M065M;LINKAGE=D

NODE=M065M5

NODE=M065M5

3($\pi^+ \pi^-$) AND 2($\pi^+ \pi^- \pi^0$) MODES

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|--|---------------------|--|---------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 1730 ± 34 | 19 FRABETTI 04 E687 | $\gamma p \rightarrow 3\pi^+ 3\pi^- p$ | |
| 1783 ± 15 | CLEGG 90 RVUE | e ⁺ e ⁻ → 3($\pi^+ \pi^-$)2($\pi^+ \pi^- \pi^0$) | |

19 From a fit with two resonances with the JACOB 72 continuum.

NODE=M065M7

NODE=M065M7

NODE=M065M;LINKAGE=PI

NODE=M065210

NODE=M065W0

NODE=M065W0

→ UNCHECKED ←

NODE=M065W6

NODE=M065W6

NODE=M065W;LINKAGE=B

 $\eta\rho^0$ AND $\pi^+ \pi^-$ MODES

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------------------------|-------------|------|---------|
| 250 ± 100 OUR ESTIMATE | | | |

 $\eta\rho^0$ MODE

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-------------|------|---------|
| The data in this block is included in the average printed for a previous datablock. | | | |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | |
|----------|------------------|--|
| 150 ± 30 | ANTONELLI 88 DM2 | e ⁺ e ⁻ → $\eta\pi^+\pi^-$ |
| 282 ± 44 | 20 FUKUI 88 SPEC | 8.95 $\pi^- p \rightarrow \eta\pi^+\pi^- n$ |

20 Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi$ background. From a two Breit-Wigner fit.

$\pi\pi$ MODE

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|-------------|------|-------------|------|---------|
|-------------|------|-------------|------|---------|

The data in this block is included in the average printed for a previous datablock.

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | | |
|-----------------------------|-------|-----------------|----------|---|--|
| 310 \pm 30 $^{+25}_{-35}$ | 63.5k | 21 ABRAMOWICZ12 | ZEUS | $e p \rightarrow e \pi^+ \pi^- p$ | |
| 316 \pm 26 | | 22 LEES | 12G BABR | $e^+ e^- \rightarrow \pi^+ \pi^- \gamma$ | |
| 164 \pm 21 $^{+89}_{-26}$ | 5.4M | 23,24 FUJIKAWA | 08 BELL | $\tau^- \rightarrow \pi^- \pi^0 \nu_\tau$ | |
| 275 \pm 45 | | 25 ABELE | 97 CBAR | $\bar{p} n \rightarrow \pi^- \pi^0 \pi^0$ | |
| 310 \pm 40 | | 25 BERTIN | 97C OBLX | $0.0 \bar{p} p \rightarrow \pi^+ \pi^- \pi^-$ | |
| 400 \pm 100 | | CLEGG | 94 RVUE | $e^+ e^- \rightarrow \pi^+ \pi^-$ | |
| 224 \pm 22 | | BISELLO | 89 DM2 | $e^+ e^- \rightarrow \pi^+ \pi^-$ | |
| 242.5 \pm 163.0 | | DUBNICKA | 89 RVUE | $e^+ e^- \rightarrow \pi^+ \pi^-$ | |
| 620 \pm 60 | | GESHKEN... | 89 RVUE | | |
| <315 | | 26 ERKAL | 85 RVUE | 20-70 $\gamma p \rightarrow \gamma \pi$ | |
| 280 $^{+30}_{-80}$ | | ABE | 84B HYBR | 20 $\gamma p \rightarrow \pi^+ \pi^- p$ | |
| 230 \pm 80 | | 27 ASTON | 80 OMEG | 20-70 $\gamma p \rightarrow p 2\pi$ | |
| 283 \pm 14 | | 28 ATIYA | 79B SPEC | 50 $\gamma C \rightarrow C 2\pi$ | |
| 175 $^{+98}_{-53}$ | | BECKER | 79 ASPK | 17 $\pi^- p$ polarized | |
| 232 \pm 34 | | 26 LANG | 79 RVUE | | |
| 340 | | 26 MARTIN | 78C RVUE | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |
| 300 \pm 100 | | 26 FROGGATT | 77 RVUE | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |
| 180 \pm 50 | | 29 HYAMS | 73 ASPK | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |

21 Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho - \omega$ interference.

22 Using the GOUNARIS 68 parametrization of the pion form factor leaving the masses and widths of the $\rho(1450)$, $\rho(1700)$, and $\rho(2150)$ resonances as free parameters of the fit.

23 $|F_\pi(0)|^2$ fixed to 1.

24 From the GOUNARIS 68 parametrization of the pion form factor.

25 T-matrix pole.

26 From phase shift analysis of HYAMS 73 data.

27 Simple relativistic Breit-Wigner fit with constant width.

28 An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.

29 Included in BECKER 79 analysis.

NODE=M065W1

NODE=M065W1

NODE=M065W1;LINKAGE=AB

NODE=M065W1;LINKAGE=LE

NODE=M065W1;LINKAGE=FU

NODE=M065W1;LINKAGE=GO

NODE=M065W;LINKAGE=QQ

NODE=M065W;LINKAGE=P

NODE=M065W;LINKAGE=M

NODE=M065W;LINKAGE=R

NODE=M065W;LINKAGE=H

NODE=M065W2

NODE=M065W2

NODE=M065W2;LINKAGE=AN

NODE=M065W4

NODE=M065W4

OCCUR=2

NODE=M065W;LINKAGE=A

NODE=M065W4;LINKAGE=M

NODE=M065W;LINKAGE=O

NODE=M065W;LINKAGE=C

NODE=M065W;LINKAGE=D

NODE=M065W;LINKAGE=E

 $K\bar{K}$ MODE

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | CHG | COMMENT |
|-------------|------|-------------|------|-----|---------|
|-------------|------|-------------|------|-----|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | | |
|------------------|------|----------|----------|---|--|
| 187.2 \pm 26.7 | 27k | 30 ABELE | 99D CBAR | \pm 0.0 $\bar{p} p \rightarrow K^+ K^- \pi^0$ | |
| 265 \pm 120 | 1600 | CLELAND | 82B SPEC | \pm 50 $\pi p \rightarrow K_S^0 K^\pm p$ | |

30 K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$.

2 ($\pi^+ \pi^-$) MODE

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|-------------|------|-------------|------|---------|
|-------------|------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | | |
|---------------|-----|--------------|----------|--|--|
| 510 \pm 40 | | 31 CORDIER | 82 DM1 | $e^+ e^- \rightarrow 2(\pi^+ \pi^-)$ | |
| 400 \pm 50 | | 32 ASTON | 81E OMEG | 20-70 $\gamma p \rightarrow p 4\pi$ | |
| 400 \pm 146 | | 33 DIBIANCA | 81 DBC | $\pi^+ d \rightarrow p p 2(\pi^+ \pi^-)$ | |
| 700 \pm 160 | | 31 BACCI | 80 FRAG | $e^+ e^- \rightarrow 2(\pi^+ \pi^-)$ | |
| 100 | 34 | KILLIAN | 80 SPEC | 11 $e^- p \rightarrow 2(\pi^+ \pi^-)$ | |
| 600 | | 34 ATIYA | 79B SPEC | 50 $\gamma C \rightarrow C 4\pi^\pm$ | |
| 340 \pm 160 | 65 | 35 ALEXANDER | 75 HBC | 7.5 $\gamma p \rightarrow p 4\pi$ | |
| 360 \pm 100 | | 32 CONVERSI | 74 OSPK | $e^+ e^- \rightarrow 2(\pi^+ \pi^-)$ | |
| 400 \pm 120 | 160 | 36 SCHACHT | 74 STRC | 5.5-9 $\gamma p \rightarrow p 4\pi$ | |
| 850 \pm 200 | 340 | 36 SCHACHT | 74 STRC | 9-18 $\gamma p \rightarrow p 4\pi$ | |
| 650 \pm 100 | 400 | BINGHAM | 72B HBC | 9.3 $\gamma p \rightarrow p 4\pi$ | |

31 Simple relativistic Breit-Wigner fit with model-dependent width.

32 Simple relativistic Breit-Wigner fit with constant width.

33 One peak fit result.

34 Parameters roughly estimated, not from a fit.

35 Skew mass distribution compensated by Ross-Stodolsky factor.

36 Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.

$\pi^+\pi^-\pi^0\pi^0$ MODE

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

300±50 ATKINSON 85B OMEG 20–70 γp

 $\omega\pi^0$ MODE

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

350 to 580 37 ACHASOV 00I SND $e^+e^- \rightarrow \pi^0\pi^0\gamma$

490 to 1040 38 ACHASOV 00I SND $e^+e^- \rightarrow \pi^0\pi^0\gamma$

37 Taking into account both $\rho(1450)$ and $\rho(1700)$ contributions. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$. $\rho(1450)$ mass and width fixed at 1400 MeV and 500 MeV respectively.

38 Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$.

3($\pi^+\pi^-$) AND 2($\pi^+\pi^-\pi^0$) MODES

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

315±100 39 FRABETTI 04 E687 $\gamma p \rightarrow 3\pi^+3\pi^-p$

285±20 CLEGG 90 RVUE $e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

39 From a fit with two resonances with the JACOB 72 continuum.

 $\rho(1700)$ DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|---|--------------------------------|
| Γ_1 4π | |
| Γ_2 $2(\pi^+\pi^-)$ | large |
| Γ_3 $\rho\pi\pi$ | dominant |
| Γ_4 $\rho^0\pi^+\pi^-$ | large |
| Γ_5 $\rho^0\pi^0\pi^0$ | large |
| Γ_6 $\rho^\pm\pi^\mp\pi^0$ | large |
| Γ_7 $a_1(1260)\pi$ | seen |
| Γ_8 $h_1(1170)\pi$ | seen |
| Γ_9 $\pi(1300)\pi$ | seen |
| Γ_{10} $\rho\rho$ | seen |
| Γ_{11} $\pi^+\pi^-$ | seen |
| Γ_{12} $\pi\pi$ | seen |
| Γ_{13} $K\bar{K}^*(892) + \text{c.c.}$ | seen |
| Γ_{14} $\eta\rho$ | seen |
| Γ_{15} $a_2(1320)\pi$ | not seen |
| Γ_{16} $K\bar{K}$ | seen |
| Γ_{17} e^+e^- | seen |
| Γ_{18} $\pi^0\omega$ | seen |

 $\rho(1700) \Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

This combination of a partial width with the partial width into e^+e^- and with the total width is obtained from the cross-section into channel i in e^+e^- annihilation.

 $\Gamma(2(\pi^+\pi^-)) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$

| VALUE (keV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

2.6 ± 0.2 DELCOURT 81B DM1 $e^+e^- \rightarrow 2(\pi^+\pi^-)$

2.83±0.42 BACCI 80 FRAG $e^+e^- \rightarrow 2(\pi^+\pi^-)$

 $\Gamma(\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$

| VALUE (keV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.13 40 DIEKMAN 88 RVUE $e^+e^- \rightarrow \pi^+\pi^-$

0.029^{+0.016}_{-0.012} KURDADZE 83 OLYA 0.64–1.4 $e^+e^- \rightarrow \pi^+\pi^-$

40 Using total width = 220 MeV.

NODE=M065W5

NODE=M065W5

NODE=M065W9

NODE=M065W9

OCCUR=2

NODE=M065W;LINKAGE=I1

NODE=M065W;LINKAGE=I2

NODE=M065W7

NODE=M065W7

NODE=M065W;LINKAGE=PI

NODE=M065215;NODE=M065

DESIG=20

DESIG=2;OUR EST;→ UNCHECKED ←

DESIG=12;OUR EST;→ UNCHECKED ←

DESIG=1;OUR EST;→ UNCHECKED ←

DESIG=7

DESIG=9;OUR EST;→ UNCHECKED ←

DESIG=15;OUR EST;→ UNCHECKED ←

DESIG=16;OUR EST;→ UNCHECKED ←

DESIG=17;OUR EST;→ UNCHECKED ←

DESIG=18;OUR EST;→ UNCHECKED ←

DESIG=4;OUR EST;→ UNCHECKED ←

DESIG=13;OUR EST;→ UNCHECKED ←

DESIG=10;OUR EST;→ UNCHECKED ←

DESIG=11;OUR EST;→ UNCHECKED ←

DESIG=14;OUR EST;→ UNCHECKED ←

DESIG=5;OUR EST;→ UNCHECKED ←

DESIG=8;OUR EST;→ UNCHECKED ←

DESIG=6;OUR EST;→ UNCHECKED ←

NODE=M065225

NODE=M065225

NODE=M065G2

NODE=M065G2

NODE=M065G4

NODE=M065G4

NODE=M065G4;LINKAGE=B

| $\Gamma(K\bar{K}^*(892) + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ | $\Gamma_{13}\Gamma_{17}/\Gamma$ | | |
|---|---------------------------------|-------------|-------------------------------------|
| VALUE (keV) | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.305 ± 0.071 | 41 BIZOT | 80 DM1 | e^+e^- |
| 41 Model dependent. | | | |
| $\Gamma(\eta\rho) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ | $\Gamma_{14}\Gamma_{17}/\Gamma$ | | |
| VALUE (eV) | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 7 ± 3 | ANTONELLI | 88 DM2 | $e^+e^- \rightarrow \eta\pi^+\pi^-$ |
| $\Gamma(K\bar{K}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ | $\Gamma_{16}\Gamma_{17}/\Gamma$ | | |
| VALUE (keV) | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.035 ± 0.029 | 42 BIZOT | 80 DM1 | e^+e^- |
| 42 Model dependent. | | | |
| $\Gamma(\rho\pi\pi) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ | $\Gamma_3\Gamma_{17}/\Gamma$ | | |
| VALUE (keV) | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 3.510 ± 0.090 | 43 BIZOT | 80 DM1 | e^+e^- |
| 43 Model dependent. | | | |

$\rho(1700)$ BRANCHING RATIOS

| $\Gamma(\rho\pi\pi)/\Gamma(4\pi)$ | Γ_3/Γ_1 | | |
|---|---------------------|--------------------|---|
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.28 ± 0.06 | 44 ABELE | 01B CBAR | $0.0 \bar{p}n \rightarrow 5\pi$ |
| 44 $\omega\pi$ not included. | | | |
| $\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ | Γ_4/Γ_2 | | |
| VALUE | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| ~ 1.0 | DELCOURT | 81B DM1 | $e^+e^- \rightarrow 2(\pi^+\pi^-)$ |
| 0.7 ± 0.1 | 500 SCHACHT | 74 STRC | $5.5\text{--}18 \gamma p \rightarrow p4\pi$ |
| 0.80 | 45 BINGHAM | 72B HBC | $9.3 \gamma p \rightarrow p4\pi$ |
| 45 The $\pi\pi$ system is in S-wave. | | | |
| $\Gamma(\rho^0\pi^0\pi^0)/\Gamma(\rho^\pm\pi^\mp\pi^0)$ | Γ_5/Γ_6 | | |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| <0.10 | ATKINSON | 85B OMEG | $20\text{--}70 \gamma p$ |
| <0.15 | ATKINSON | 82 OMEG 0 | $20\text{--}70 \gamma p \rightarrow p4\pi$ |
| $\Gamma(a_1(1260)\pi)/\Gamma(4\pi)$ | Γ_7/Γ_1 | | |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.16 ± 0.05 | 46 ABELE | 01B CBAR | $0.0 \bar{p}n \rightarrow 5\pi$ |
| 46 $\omega\pi$ not included. | | | |
| $\Gamma(h_1(1170)\pi)/\Gamma(4\pi)$ | Γ_8/Γ_1 | | |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.17 ± 0.06 | 47 ABELE | 01B CBAR | $0.0 \bar{p}n \rightarrow 5\pi$ |
| 47 $\omega\pi$ not included. | | | |
| $\Gamma(\pi(1300)\pi)/\Gamma(4\pi)$ | Γ_9/Γ_1 | | |
| VALUE | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
| $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$ | | | |
| 0.30 ± 0.10 | 48 ABELE | 01B CBAR | $0.0 \bar{p}n \rightarrow 5\pi$ |
| 48 $\omega\pi$ not included. | | | |

$\Gamma(\rho\rho)/\Gamma(4\pi)$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{10}/Γ_1 |
|--|--------------------|-------------|---------------------------------|------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.09±0.03 | 49 ABELE | 01B CBAR | 0.0 $\bar{p}n \rightarrow 5\pi$ | |
| 49 $\omega\pi$ not included. | | | | |

NODE=M065R18
NODE=M065R18 $\Gamma(\pi^+\pi^-)/\Gamma_{\text{total}}$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{11}/Γ |
|--|--------------------|-------------|--|----------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.287 ^{+0.043} _{-0.042} | BECKER | 79 ASPK | 17 $\pi^- p$ polarized | |
| 0.15 to 0.30 | 50 MARTIN | 78C RVUE | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |
| <0.20 | 51 COSTA... | 77B RVUE | $e^+ e^- \rightarrow 2\pi, 4\pi$ | |
| 0.30 ± 0.05 | 50 FROGGATT | 77 RVUE | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |
| <0.15 | 52 EISENBERG | 73 HBC | 5 $\pi^+ p \rightarrow \Delta^{++} 2\pi$ | |
| 0.25 ± 0.05 | 53 HYAMS | 73 ASPK | 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ | |
| 50 From phase shift analysis of HYAMS 73 data. | | | | |
| 51 Estimate using unitarity, time reversal invariance, Breit-Wigner. | | | | |
| 52 Estimated using one-pion-exchange model. | | | | |
| 53 Included in BECKER 79 analysis. | | | | |

NODE=M065R18;LINKAGE=BL

NODE=M065R5
NODE=M065R5 $\Gamma(\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{11}/Γ_2 |
|--|--------------------|-------------|-------------------------------------|------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.13±0.05 | ASTON | 80 OMEG | 20–70 $\gamma p \rightarrow p 2\pi$ | |
| <0.14 | 54 DAVIER | 73 STRC | 6–18 $\gamma p \rightarrow p 4\pi$ | |
| <0.2 | 55 BINGHAM | 72B HBC | 9.3 $\gamma p \rightarrow p 2\pi$ | |
| 54 Upper limit is estimate. | | | | |
| 55 2 σ upper limit. | | | | |

NODE=M065R5;LINKAGE=P
NODE=M065R5;LINKAGE=C
NODE=M065R5;LINKAGE=E
NODE=M065R5;LINKAGE=HNODE=M065R3
NODE=M065R3 $\Gamma(\pi\pi)/\Gamma(4\pi)$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{12}/Γ_1 |
|--|--------------------|-------------|---------------------------------|------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.16±0.04 | 56,57 ABELE | 01B CBAR | 0.0 $\bar{p}n \rightarrow 5\pi$ | |

NODE=M065R3;LINKAGE=E

NODE=M065R3;LINKAGE=S

NODE=M065R20
NODE=M065R20 $\Gamma(K\bar{K}^*(892)+\text{c.c.})/\Gamma_{\text{total}}$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{13}/Γ |
|--|--------------------|-------------|---|----------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| possibly seen | COAN | 04 CLEO | $\tau^- \rightarrow K^- \pi^- K^+ \nu_\tau$ | |

NODE=M065R;LINKAGE=LK
NODE=M065R20;LINKAGE=BLNODE=M065R21
NODE=M065R21 $\Gamma(K\bar{K}^*(892)+\text{c.c.})/\Gamma(2(\pi^+\pi^-))$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{13}/Γ_2 |
|--|--------------------|-------------|-----------------------------------|------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.15±0.03 | 58 DELCOURT | 81B DM1 | $e^+ e^- \rightarrow \bar{K}K\pi$ | |
| 58 Assuming $\rho(1700)$ and ω radial excitations to be degenerate in mass. | | | | |

NODE=M065R9
NODE=M065R9

NODE=M065R9;LINKAGE=D

 $\Gamma(\eta\rho)/\Gamma_{\text{total}}$

| <u>VALUE</u> | <u>CL%</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{14}/Γ |
|--|------------|--------------------|-------------|--------------------------------------|----------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | | |
| possibly seen | | AKHMETSHIN 00D | CMD2 | $e^+ e^- \rightarrow \eta\pi^+\pi^-$ | |
| <0.04 | | DONNACHIE 87B | RVUE | | |
| <0.02 | 58 | ATKINSON 86B | OMEG | 20–70 γp | |

NODE=M065R12
NODE=M065R12 $\Gamma(\eta\rho)/\Gamma(2(\pi^+\pi^-))$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | Γ_{14}/Γ_2 |
|--|--------------------|-------------|--|------------------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.123±0.027 | DELCOURT 82 | DM1 | $e^+ e^- \rightarrow \pi^+\pi^- \text{MM}$ | |
| ~0.1 | ASTON 80 | OMEG | 20–70 γp | |

NODE=M065R8
NODE=M065R8

$\Gamma(\pi^+\pi^- \text{ neutrals})/\Gamma(2(\pi^+\pi^-))$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|-------------|------|---------|
|-------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

2.6±0.4 59 BALLAM 74 HBC 9.3 γp

59 Upper limit. Background not subtracted.

 $\Gamma(a_2(1320)\pi)/\Gamma_{\text{total}}$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|-------------|------|---------|
|-------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

not seen AMELIN 00 VES 37 $\pi^- p \rightarrow \eta\pi^+\pi^- n$

 $\Gamma(K\bar{K})/\Gamma(2(\pi^+\pi^-))$

| VALUE | CL% | DOCUMENT ID | TECN | CHG | COMMENT |
|-------|-----|-------------|------|-----|---------|
|-------|-----|-------------|------|-----|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.015±0.010 60 DELCOURT 81B DM1 $e^+e^- \rightarrow K\bar{K}$
 <0.04 95 BINGHAM 72B HBC 0 9.3 γp

60 Assuming $p(1700)$ and ω radial excitations to be degenerate in mass.

 $\Gamma(K\bar{K})/\Gamma(K\bar{K}^*(892)+\text{c.c.})$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|-------------|------|---------|
|-------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.052±0.026 BUON 82 DM1 $e^+e^- \rightarrow \text{hadrons}$

 $\Gamma(\pi^0\omega)/\Gamma_{\text{total}}$

| VALUE | EVTS | DOCUMENT ID | TECN | COMMENT |
|-------|------|-------------|------|---------|
|-------|------|-------------|------|---------|

• • • We do not use the following data for averages, fits, limits, etc. • • •

seen 1.6k ACHASOV 12 SND $e^+e^- \rightarrow \pi^0\pi^0\gamma$
 not seen 2382 AKHMETSHIN 03B CMD2 $e^+e^- \rightarrow \pi^0\pi^0\gamma$
 seen ACHASOV 97 RVUE $e^+e^- \rightarrow \omega\pi^0$

 Γ_{15}/Γ

NODE=M065R7
NODE=M065R7

NODE=M065R7;LINKAGE=U

NODE=M065R14
NODE=M065R14

 Γ_{16}/Γ_2

NODE=M065R4
NODE=M065R4

NODE=M065R4;LINKAGE=D

NODE=M065R10
NODE=M065R10

 Γ_{18}/Γ

NODE=M065R13
NODE=M065R13

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